

# CAITLIN E. HICKS PRIES

cehpries@lbl.gov  
413-530-8481  
4024 Broadway, Oakland, CA 94611

**RESEARCH FOCUS:** How the carbon cycle of terrestrial soils responds to climate change.

**CURRENT POSITION:** Postdoctoral Research Associate, Lawrence Berkeley National Laboratory, Berkeley, California, advised by Margaret Torn (January 2013-Present)

## EDUCATION

- Ph.D. (2012)    Biology, University of Florida  
Dissertation: Carbon cycle changes in a changing climate: Effects of permafrost thaw on ecosystem respiration, soil C accumulation, and decomposition.  
Advisor: Edward A. G. Schuur
- M.S. (2007)    Soil and Water Science, University of Florida  
Thesis: Sediment organic carbon pools and sources in a recently constructed mangrove and seagrass ecosystem.  
Advisor: K. Ramesh Reddy
- B.A. (2004)    Biology and Environmental Studies (*summa cum laude*), Middlebury College  
Independent Project: Stochastic modeling of *Caretta caretta* populations in the Southeastern United States.

Field/Lab Courses:    Radiocarbon in Ecology and Earth System Science, UC Irvine, 2009  
Semester in Environmental Science, Woods Hole Marine Biological Lab, 2003

## GRANTS AND FELLOWSHIPS

- 2011    University of Florida Graduate Student Research Abroad Program, *The effect of permafrost warming on arctic carbon balance*, \$9,995
- 2010    National Science Foundation Doctoral Dissertation Improvement Grant, *Carbon cycle changes in a changing climate: Using <sup>13</sup>C and <sup>14</sup>C to partition ecosystem respiration in tundra undergoing permafrost thaw*, \$14,941
- 2010    Denali National Park Murie Science and Learning Center Research Fellowship, *Carbon cycle changes in warming Alaska: Do plants or soil microbes drive changes in ecosystem respiration?*, \$4,580
- 2009    Science Partners in Inquiry-based Collaborative Education (SPICE) Fellowship, National Science Foundation GK-12 Program, \$33,000 stipend and tuition
- 2007    Alumni Graduate Fellowship, University of Florida, 2 years of \$18,000 stipend and tuition

## AWARDS

- 2012    Graduate Student Mentoring Award, University of Florida, \$500
- 2012    Terrestrial Ecosystem Science Meeting Student Travel Grant, U.S. Department of Energy, \$1,000
- 2012    Departmental Service Award, University of Florida, Biology Department, \$150
- 2011    Abisko Scientific Research Station Scholarship, \$1,300

- 2008 Best Masters Thesis, University of Florida, College of Agriculture and Life Sciences, \$600
- 2007 Best Masters Thesis, University of Florida, Soil and Water Science Department, \$150
- 2007 Grinter Fellowship, University of Florida, \$6,000
- 2006 William K. Robertson Fellowship, University of Florida, Soil and Water Science Department, \$1,000
- 2006 Honorable Mention, Student Poster Contest at the 3<sup>rd</sup> National Conference on Coastal and Estuarine Habitat Restoration
- 2006 Best Student Poster at the 7<sup>th</sup> Annual Soil and Water Science Department Research Forum, \$500
- 2004 Phi Beta Kappa, Beta Chapter of Vermont
- 2004 Elbert C. Cole '15 Memorial Fund Prize for Outstanding Biology Student, Middlebury College, \$2,000
- 2000 Henry David Thoreau Scholarship for Environmental Studies, \$30,000
- 2000 Big Y Scholarship, \$2,000

## **PUBLICATIONS**

### **Refereed Journal Articles**

- Hicks Pries C.E.**, Schuur E.A.G., Crummer K.G. 2013. Thawing permafrost increases old soil and autotrophic respiration in tundra: Partitioning ecosystem respiration using  $\delta^{13}\text{C}$  and  $\Delta^{14}\text{C}$ . *Global Change Biology* 19 (2) doi: 10.1111/gcb.12058.
- Hicks Pries C.E.**, E.A.G. Schuur, and K. G. Crummer. 2012. Holocene Carbon Stocks and Carbon Accumulation Rates Altered in Soils Undergoing Permafrost Thaw. *Ecosystems* 12 (1): 162-173.
- Hicks Pries, C.E.** and J. Hughes. 2012. Inquiring into familiar objects: An inquiry-based approach to introduce scientific vocabulary. *Science Activities* 49 (2): 64-69.
- Hicks Pries, C.E.** and J. Hughes. 2011. Powering the Future: A wind turbine design competition. *Science Scope* 35 (4): 24-30.
- Natali, S. M., E.A.G. Schuur, C. Trucco, **C.E. Hicks Pries**, K. G. Crummer, and A.F. Baron Lopez. 2011. Effects of experimental warming of air, soil and permafrost on carbon balance in Alaskan tundra. *Global Change Biology* 17 (3): 1394-1407.

### **Other**

- Mason C.M., **C.E. Hicks Pries**, and E. A. G. Schuur. 2010. Seasonal differences in nutrient allocation of arctic tundra vegetation. *University of Florida Journal of Undergraduate Research* 11(2). To access: <http://www.clas.ufl.edu/jur/201007/index.html>.
- Mayor J.R. and **C.E. Hicks**. 2009. Potential impacts of elevated  $\text{CO}_2$  on plant interactions, sustained growth, and C cycling in salt marsh ecosystems *in* Human Impacts on Salt Marshes: A Global Perspective. Silliman B.R., M.D. Bertness, and E.D. Grosholz, editors.

### **Manuscripts in review or advanced preparation**

- Hicks Pries, C.E.**, E.A.G. Schuur, J.G. Vogel, S.M. Natali. (*In review*). Moisture controls over decomposition in thawing tundra. *JGR-Biogeosciences*.
- Natali, S.M., E.A.G. Schuur, E. Webb, **C.E. Hicks Pries**, K.G. Crummer. (*In review*). Permafrost degradation stimulates carbon loss from experimentally warmed tundra. *Nature*.
- Hicks Pries, C.E.**, T.Z. Osborne, K.R. Reddy, and L.R. Ellis. (*Advanced prep*). Initial carbon storage in restored coastal ecosystems.

Schuur E.A.G., Carbone M.S., **Hicks Pries C.E.**, Hopkins F., Natali S.M. (*In internal review*). Radiocarbon in terrestrial systems *in* Radiocarbon in Ecology and Earth System Science. Schuur E.A.G. and S. Trumbore, editors.

Trumbore, S., Sierra C.A., **Hicks Pries C.E.** (*In internal review.*) Radiocarbon nomenclature, theory, models, and interpretation: Measuring age, tracing source pools, and determining cycling rates *in* Radiocarbon in Ecology and Earth System Science. Schuur E.A.G. and S. Trumbore, editors.

## INVITED SEMINARS

**Hicks Pries, C.** 2011. Beneath our feet: Soil carbon and ice dynamics and the future of our climate. Murie Science and Learning Center, Denali National Park, AK.

**Hicks, C.** 2007. Coastal ecosystems as carbon sinks: A case study from the Indian River Lagoon. Wetlands Seminar Series, University of Florida.

## PRESENTATIONS

**C.E. Hicks Pries**, E.F. Pegoraro, E.A.G. Schuur, M.C. Mack, J. DeMarco. 2012. The effects of permafrost thaw and climate change on decomposition in subarctic tundra (*oral*). 97<sup>th</sup> Annual Meeting of Ecological Society of America, Portland, Oregon.

**C.E. Hicks Pries**, E.A.G. Schuur, K.G. Crummer, and S.M. Natali. 2012. Using  $\Delta^{14}\text{C}$  and  $\delta^{13}\text{C}$  to Partition Ecosystem Respiration in Tundra Undergoing Permafrost Thaw and Warming (*poster*). Department of Energy Terrestrial Ecosystems Science Principal Investigator's Meeting, Washington, D.C.

Pegoraro E.F., **C.E. Hicks Pries**, and E.A.G. Schuur. 2012. Initial soil carbon and nitrogen pools in an Alaskan tundra warming experiment (*poster*). Southeastern Ecology and Evolution Conference, Clemson, South Carolina.

**Hicks Pries, C. E.** and E. A. Schuur. 2011. Using  $\delta^{13}\text{C}$  and  $\Delta^{14}\text{C}$  to partition ecosystem respiration in a permafrost warming experiment. (*oral*). American Geophysical Union Fall Meeting, San Francisco, California.

**Hicks Pries, C. E.**, B. K. Atkinson, E. L. Bunting, J. G. Clar, A. Hotaling, A. Miro-Herrans, T. Moloye, and M. Morales. 2011. Incorporating research into middle school classrooms via module creation (*poster*). NSF Graduate STEM Fellows in K-12 Education (GK-12) Annual Conference, Washington D.C.

**Hicks Pries, C. E.** and E. A. Schuur. 2010. Partitioning ecosystem respiration using carbon isotopes in tundra undergoing permafrost thaw (*poster*). American Geophysical Union Fall Meeting, San Francisco, California.

Schuur, E. A., S. M. Natali, C. Trucco, **C.E. Hicks Pries**, K. G. Crummer, and A.F. Baron Lopez. 2010. Effects of experimental warming of the deep soil and permafrost on the carbon balance in Alaskan tundra (*oral*). American Geophysical Union Fall Meeting, San Francisco, California.

**Hicks, C.**, E.A.G. Schuur, and K.G. Crummer. 2009. Carbon storage and accumulation rates in soil undergoing permafrost thaw (*poster*). American Geophysical Union Fall Meeting, San Francisco, California.

Mason C.M. and **C.E. Hicks Pries**. 2009. Seasonal differences in nutrient allocation of arctic tundra plants (*poster*). Southeastern Ecology and Evolution Conference, Gainesville, Florida.

**Hicks, C.**, T. Osborne, and K.R. Reddy. 2007. Comparing sediment organic carbon pools in constructed and natural mangrove forests and seagrass beds (*oral*). 92<sup>nd</sup> Annual Meeting of Ecological Society of America, San Jose, California.

**Hicks, C.,** T. Osborne, and K.R. Reddy. 2006. Sources of sediment organic carbon in recently constructed mangrove and seagrass systems in the Indian River Lagoon, Florida (*poster*). 3<sup>rd</sup> National Conference on Coastal and Estuarine Habitat Restoration, New Orleans, Louisiana.

**Hicks, C.,** T. Osborne, and K.R. Reddy. 2006. Accumulation of organic carbon in the soils of recently constructed mangrove and seagrass systems in the Indian River Lagoon, Florida (*poster*). 7<sup>th</sup> Annual Soil and Water Science Department Research Forum, University of Florida.

**Hicks, C.,** T. Osborne, and K.R. Reddy. 2006. Accumulation of organic carbon in the soils of recently constructed mangrove and seagrass systems in the Indian River Lagoon, Florida (*poster*). American Society of Limnology and Oceanography Summer Meeting, Victoria, British Columbia.

**Hicks, C.,** M. Cadenasso, and S. Pickett. 2005. Differences in nutrient limitation among tree species and riparian areas in Kruger National Park, South Africa (*oral*). 90<sup>th</sup> Annual Meeting of Ecological Society of America, Montreal, Quebec.

## **RESEARCH EXPERIENCE**

- |           |                                                                                                                                                                                                            |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2007-2012 | Doctoral Student, Effects of permafrost thaw and warming on carbon cycling in Alaskan tundra, Dr. Ted Schuur, University of Florida                                                                        |
| 2005-2007 | Masters Student, Carbon pools and sources in a constructed mangrove and seagrass habitat, Dr. K. Ramesh Reddy, University of Florida                                                                       |
| 2004-2005 | Research Assistant, Landscape ecology of urban ecosystems and river/savanna boundaries, Drs. Steward Pickett and Mary Cadenasso, Cary Institute of Ecosystem Studies                                       |
| 2004      | Undergraduate Research Project, Stochastic modeling of <i>Caretta caretta</i> populations in the Southeastern United States, Dr. Stephen Trombulak, Middlebury College                                     |
| 2003      | Undergraduate Research Project, Nutrient limitations on peat decomposition and nutrient loading in Atlantic White Cedar Swamps, Semester in Environmental Science, Woods Hole Marine Biological Laboratory |
| 2003      | Sea Turtle Intern, Monitoring sea turtle nesting and hatching, Bald Head Island Conservancy, Bald Head Island, NC                                                                                          |
| 2002      | REU Intern, Marine Benthic Ecology, Dr. Les Watling, Darling Marine Center, University of Maine                                                                                                            |
| 2001      | Research Assistant, Pollination ecology, Dr. Helen Young, Middlebury College                                                                                                                               |

## **TEACHING EXPERIENCE**

- |            |                                                                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2012, 2008 | Teaching Assistant, Ecology, University of Florida                                                                                                     |
| 2011, 2008 | Teaching Assistant, Biological Sciences II, University of Florida                                                                                      |
| 2009-2011  | SPICE Fellow, Developed lessons and taught eighth grade Physical Science, University of Florida and Westwood Middle School                             |
| 2006       | Teaching Assistant, Wetland Biogeochemistry, University of Florida                                                                                     |
| 2004       | Teaching Assistant, Ecology, Middlebury College                                                                                                        |
| 2003       | Sea Turtle Intern, Taught children and general public about sea turtle biology and coastal ecology, Bald Head Island Conservancy, Bald Head Island, NC |

**Guest Lectures**

2012 Ecology, Energy flow through ecosystems, University of Florida  
2010 Ecosystem Ecology, Soil organic carbon, University of Florida  
2008 Ecology, Physiological ecology, University of Florida

**Mentoring**

2010-2012 Senior Thesis and Independent Project Advisor to Elaine Pegoraro, University of Florida  
2008-2011 Supervisor to Undergraduate Volunteers, University of Florida  
2008-2009 Senior Thesis Advisor to Chase Mason, University of Florida

**SERVICE****Professional**

2011-present Reviewer, JGR-Biogeosciences

**Departmental**

2011-2012 Oversaw undergraduate research assistantship program and organized undergraduate research symposium, Department of Biology, University of Florida  
2011-2012 Graduate committee representative, Department of Biology, University of Florida  
2010-2011 Seminar committee representative, Department of Biology, University of Florida  
2009-2010 Secretary, Biology Graduate Student Association, University of Florida  
2008-2009 Student/Faculty Liaison, Botany Graduate Student Association, University of Florida

**Community**

2006-present Alumni Interviewer, Middlebury College Admissions  
2009-2012 Science Fair Judge, Alachua County School District, Florida

**PROFESSIONAL SOCIETY MEMBERSHIPS**

2009-Present American Geophysical Union  
2007-Present Ecological Society of America